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UNITED STATES DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

CARBON SEQUESTRATION PROGRAM

PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

PUBLIC SCOPING MEETING

MAY 25, 2004

MR. LORENZI: All right. Just a few minutes here. Good evening. The time is now 7:03 p.m. This meeting was arranged by the Department of Energy as one part of a process to obtain public participation in an effort to prepare a detailed environmental analysis by the government -- an environmental impact statement -- for activities associated with implementing the Department of Energy's carbon sequestration research and development program.

Input from the public during this process will assist the U.S. Department of Energy in identifying and prioritizing issues related to carbon sequestration R&D, research and development, evaluating potential impacts, the framework for defining a program for future research -- refining a program of future research, development, and testing of technologies and methods for carbon sequestration. This is the fourth of eight meetings planned at various locations around the country.

The carbon sequestration activities supported by the Department of Energy will help achieve the goals of the Global Climate Change Initiative as announced by the President in 2002. That initiative will require two things with respect

to the Department of Energy's program. First is the development of technology options with the potential to reduce the carbon intensity of the U.S. economy, and the second is to help establish the information base needed by the year 2012 for effective carbon sequestration decisions to balance economic growth and investment in clean energy technologies.

The implementation of a carbon sequestration program to achieve those goals provides the essence of the basis for the Department of Energy's decision to prepare an environmental impact statement for the carbon sequestration program. Your input and comments will be an important part of that effort.

I want to thank you for your participation tonight. My name is Lloyd Lorenzi, and I'm from the Department of Energy's laboratory in Pittsburgh, Pennsylvania. Mr. Scott Klara is here tonight and will introduce himself.

MR. KLARA: I'm Scott Klara, also with the Department of Energy.

MR. LORENZI: The logistics of this meeting tonight will be a team of environmental specialists led by Potomac-Hudson Engineering Company. I would ask the team members who are

representing Potomac-Hudson to introduce themselves.

MR. JOHNSON: I'm Kevin Johnson with URS Corporation here to support the meetings as well as to prepare a programmatic environmental impact statement, as well.

MR. LORENZI: We also have a court reporter here tonight to prepare a transcript of this meeting, particularly of your comments, which will be used to document and identify the views from the public regarding the desired scope and content of the environmental analysis.

At the entrance to the meeting room we provided information regarding this meeting, including descriptions of the process to prepare an environmental impact statement, descriptions and of the Department of Energy's current activities and program plans related to carbon sequestration research and development, a registration sheet -- and I would encourage you to sign the form as an indication of your attendance at the meeting tonight. And finally and not leastly, we have provided a comment sheet on which you can submit written comments tonight or following the meeting to document for the record your observations or views regarding either the sequestration program of the Department of

Energy or the plans to prepare this environmental impact statement. But tonight we want to hear your oral comments on our effort to prepare the environmental impact statement.

We will use those comments as well as any other input obtained through the closing of the comment period on June 25th to assist in preparing that environmental analysis. Once completed, a draft of the environmental analysis will be made available for public review and comment and we will again come to the areas of -- the same areas that we're having the public meetings -- to review that draft for the purpose of reviewing that draft EIS with the public.

Before we get to your comments tonight, Scott Klara from the Department of Energy will provide a summary of the carbon sequestration activities and then you may make your comments. Scott's presentation may be useful in formulating your ideas for comments tonight, so I would encourage you to pay attention to Scott's presentation.

MR. KLARA: Good evening, everyone. Appreciate you taking your time out of your busy schedule to be here with us this evening. As I indicated, my name is Scott Klara. I am the technology manager for the carbon sequestration

program. The carbon sequestration program is within the Office of the Department of Energy and specifically the Office of Fossil Energy, which is a subdivision of the DOE.

What I plan to discuss today is to provide an overview of what is carbon sequestration, as least the way we think about it programmatically, what are some of the issues related to our fossil greenhouse gas implications, and the pathways to stabilization. I'm then going to provide an overview of the carbon sequestration program and discuss in a little detail some specific initiatives that are emerging from the program that could benefit from this programmatic environmental impact statement.

First let's go to what we consider to be carbon sequestration. Sequestration is what we consider to be capture and storage of CO2 and other greenhouse gases that would otherwise be emitted to the atmosphere. There's several approaches to capture these greenhouse gases. The first is at the point of emission. An example of that would be capturing it from a large source, like a power plant. The second option would be to capture it from the air. For example, forestation or de-forestation of agriculture where we don't really know where the

source came from.

Many storage locations are being investigated in our program. Some of the predominant options are looking at underground reservoir locations. Some examples would be oil and gas reservoirs, deep saline formations which contain briny saltwater, and coal sinks. Other options are to look at natural processes for uptake of these greenhouse gases. Some examples there are trees, grasses, and soils. Some other options that are being pursued but not yet considered feasible options are to locate CO2 salt material and convert it to a rock-like structure. You can also look at dissolving into deep oceans. Right now we're in the investigating phases of our R&D.

Going to the fossil energy situation, what these chart shows is the fossil energy that the energy sources in the United States -- and the right-hand shows it for the world. And in both cases it shows a strong reliance on fossil fuels. The United States and the world rely both on about 86 percent of their energy needs for fossil fuels, and you can see the splits for coal oil and natural gas in those figures.

What this shows is a snapshot of the

United States scenario. Looking at the lower left pie, it shows our scenario for the year 2002 at that 86 percent reliance on fossil fuels. What the upper right-hand pie shows is a predicted forecast for the year 2025.

There are a couple conclusions I would like you to take away from this slide. The forecast is showing that our reliance will stay at about an 86 percent level. However, what it's also showing is a 40 percent increase -- potential increase in the use of energy in the United States.

When you take fossil fuels, you burn them, you get C02, which is a predominant greenhouse gas. Looking at this forecast it shows that without action, it looks like C02 would certainly rise, and this forecast would show them rising at close to a 40 percent increase currently.

Let's now take a look at some fossil and greenhouse gas indications. What this chart shows is over a several hundred thousand year time span -- the several hundred thousand years of data primarily taken from ice cores and more recently from direct measurement -- shows the temperature profile over the last several hundred thousand years. The top curve shows corresponding C02 concentration in

the atmosphere. A couple trends to see from this. One is the temperature and C02 over the last several hundred thousand years have been closely linked and correlated. Another thing to show from this plot is that there's a red line on this right-hand axis that goes from about 270 to 380. That's parts per million C02. We know that approximately 150 years ago, that C02 concentrations increased 30 percent. So, some of the potential indications are that C02 concentration and temperature continue to be closely linked. Hence, some of the potential implications in temperature rise from the concentration of these greenhouse gases.

Taking a look at C02 greenhouse contributors in the United States. What this pie shows is that over 80 percent of the greenhouse gas contributions in the United States come from C02 from energy, the burning of fossil fuels primarily. It also shows another component there at 9 percent, which is methane. And these are fugitive methane emissions -- primarily emissions from land fuels, underground coal mines, and natural gas distribution systems.

The importance of this chart to our R&D program is that the bulk of our R&D program

focuses on mitigating C02 emissions. We do have a small part of our program that does focus on these fugitive methane emissions.

This chart shows that all (inaudible). I want to point your attention to the lower middle pie here that shows distribution among the fossil fuels. And you see both coal and natural gas each contribute about 27 percent contribution to greenhouse gas emissions, and oil is a very large component there at 46 percent. Now I want to point your attention to the upper right pie where it breaks it down by sector. You see there that electricity contributes close to 40 percent, 32 percent from the transportation sector, and 30 percent from others.

The significance of this information to our program is our program right now is focusing on large source emitters. Hence, we're looking at coal primarily as a coal-based power generation and we're looking at electricity. Much of our R&D you'll find is dedicated to greenhouse gas mitigation from that fuel type in that sector.

This chart shows three high-level options to deal with carbon management and greenhouse gas management. Sometimes we refer to it as three legs of a stool, three corners of a triangle. These

options are to reduce carbon intensity. Look at the renewable sources of fuel and switching to lower carbon-based fuels. The middle one is looking at improved efficiency. You can do that both on the demand and supply side. Supply side will be looking at increasing efficiency in generating electricity, for example. On the demand side, you will be looking at increased efficiency in vehicles and appliances and the like.

What we're going to talk about today is this sequestering carbon. The message I want you to take home with you from this slide is that all options will be required. I will show you in a few slides the magnitude of these emissions. There's not one option that can handle all the emissions levels. These options together can potentially form a solution to this issue.

Within the administration we really have two presidential initiatives that are driving the program. The first is called a National Climate Change Technology Mission announced by the President in June of 2001. The importance of this initiative was it was the first time within this administration that a public statement was made on how to address climate changes. Another thing that came out of that

administration is recognized technology solutions is the way to go, and it also recognized carbon sequestration is one of the key technology options.

The second initiative came on Valentine's Day 2002 called the Global Climate Change Initiative. The importance of this was the President reiterated the significance of technology and specifically carbon sequestration. It also put some measurements in metrics on the United States for reducing greenhouse gas emissions, and it provided a metric of reducing greenhouse gas by 18 percent over 10 years between the period of 2002 to 2012. The significance of that metric is our program is driven and headed towards that kind of metric in the goals of our program.

This chart is to show that there's huge worldwide capacity related to sequestration. This is a major reason why sequestration is such a big point with relationship to greenhouse gases. This chart shows that worldwide emissions are at about 6.5, that lower right-hand bar that you can barely see on the chart. On the left-hand side of the chart you see some various sequestration options that I mentioned other -- underground geologic formations, plants and agriculture, and then the

motions. And then you see a dark blue curve or dark blue line with an upper shaded line. What that represents is lower case estimates for sequestration potential, and then the upper part of the bar would represent the highest potential.

What you see from this is that sequestration can potentially deal with greenhouse gas emissions at least a century if not centuries and that is one reason why sequestration gets such hoopla with the magnitude of emissions that we're talking about.

The next chart shows is an analysis that we performed looking at possible stabilization scenarios in the United States. What this shows is an example of stabilizing -- just hypothetically if we were to look at stabilizing greenhouse gases emissions in the United States 2002 level. What would be the various levels and options that we would have to deal with that? This shows we've looked at efficiency renewables, forestation and agricultural, non-C02 gases, methane emissions, and a couple sequestration options.

So, the message to take away from this slide is all options are required. These are huge magnitudes of emissions we're dealing with. It also

shows that in this scenario and in most scenarios being analyzed, sequestration will likely have to bear the bulk of the role for the reduction. This analysis shows close to 60 percent or more would be required from sequestration contribution.

Another point I want to make is to emphasize the magnitude of these emissions. Don't be concerned with the units. A large power plant would be about five. A large coal fire power plant would be about five. There's this 1700 gap that we would have to deal with.

Some of the requirements for sequestration. Obvious ones, it has to be environmentally acceptable. Most of our R&D is headed toward trying to satisfy these requirements. We want to make sure there's no legacy for future generations and help ecosystems. We want to show that it's safe. No sign of discharges and even with small discharges, monitor them, find them, mitigate them. We also want to show that we can verify that wherever we put this CO2 carbon, whether it be an underground formation or planting a tree, we want to make sure we can verify it for sustained periods of time.

Lastly, we'll look at the various

technology available to the United States and world alliance. Give you a sense of sequestration research within the Department of Energy. At the highest level, the supplemental block shows something called the Climate Change Technology Office. That's an office within the DOE that all the functions are related to climate change and sequestration.

The lower right-hand side log shows activity done in the Office of Science, which is more basic fundamental research. The lower left-hand is the Office of Fossil Energy where this program is managed and administered, carbon sequestration. The reason that this program is coming forward with the programmatic environmental impact statement, we're really the group that's developing the technologies that are more near-term application and near-term deployment and, hence, we are (inaudible) basic parts of the program.

This chart shows the agencies conducting sequestration. It isn't just the Department of Energy. Nearly all organizations in the government in some way, shape, or form are dealing with the issue of sequestration. Just to provide two examples here, the upper right-hand side shows the Environmental Protection Agency. They are

really the lead agency looking into the non-C02 greenhouse gas. We work closely with them on that effort. The lower left-hand corner shows the United States Department of Agriculture. They are looking at sequestration by increasing uptake in natural systems. We also work closely with them. From the sequestration program standpoint, we're focusing primarily on abandoned mine lands, deforestation, and potential use related to those lands.

This schematic gives you a very high-level look at the carbon sequestration program. The left-hand large bubble shows a program providing five areas -- capture of C02, primarily from these large energy facilities; sequestration where we're looking at the various sequestration options; break-through concepts where we're looking at revolutionary possibilities to deal with this issue; fugitive methane emission; and measuring and verification of where we put it and ensure it's permanent and safe. We also have another primary initiative, as well, infrastructure, which is our regional partnerships that I'll discuss in the next slide. The other is large-scale test facility, looking at testing the commercial skills which right now we're calling future.

Just to give you a sense of our program, right now we're a 40 million-dollar program. We net roughly 40 million a year. We have roughly 80 projects in the portfolio divided up amongst these areas. Give you some input into our regional carbon sequestration partnerships. There are several partnerships established in five geographic regions. You do have two partnerships that cover this area, and we do have a representative here from the Texas Department of Geology who is a representative in supporting both of these regional partnerships.

What are the partnerships to do? The partnerships will be developing the infrastructure. If we had economical technologies today with many of the issues we saw, the infrastructure just isn't there. Some of the issues they are focusing on are base-lining regions for sources. From a sink standpoint, we have large maps that will show you where all these geologic possibilities are, but much of that capacity is unproven. We also need to address the regulatory environmental issues. If we had these technologies in place tomorrow, we would not know how to deal with those issues. We also need to establish verification protocol. One thing in our program to develop technologies is not only a

reservoir with C02, but to look at the health of a tree, measure carbon soil. It's another thing to determine how long you have to take that snapshot, how often you need to look at and ensure the health of a patch of trees. These are the issues we're looking for these partnerships to help us deal with.

The last thing I want to point out is benefits of the sequestration. What benefits for the Houston region? This reason on has a lot of potential benefits in terms of using C02 to enhance oil production, gas production, or mine coal seeps. Other regions can even look at C02, for example, to produce this saline saltwater and clean that water up for use on the surface, whether it be drinking water, irrigation, et cetera. So, there's numerous options that exist within the regions that could potentially benefit from the sequestration concept.

The last initiative I wanted to discuss is this large-scale test facility that we're looking at. What this would involve is essentially building a large cold fire power plant that could produce electricity, hydrogen, or a combination of both and then do a geologic sequestration of the C02 from this plant. It's a 1-billion-dollar initiative at the Department of Energy. We want this plant to

use the latest, greatest technologies emerging from the R&D pipeline which should allow (inaudible). We want to have permanent sequestration of C02 at about a million mega tons of C02 per year and to verify its permanence in sequestration.

To end this presentation, what I would like to do is point you to several sources of information. In addition to some of the people here, there's also good, useful information sources. We also rigorously maintain a website. The website information is -- not only can you find very detailed information on our program, you can also find contact points. Please feel free to call those contact points at any time for any information.

The last source of information I want to point you to is we do provide a free of charge electronic carbon sequestration newsletter that comes out roughly monthly. All that's required is if you have an e-mail address you can get this free of charge. You can submit that to us electronically, and we'll automatically put you on the list. That provides monthly highlights from both U.S. and the world in the area of carbon sequestration.

At this point, I would like to end my presentation and turn the meeting back over to Lloyd

and start the comment session.

MR. LORENZI: We have two people who have requested to speak tonight. We will take their comments and any others desiring to make comments, we will provide them the opportunity to do so. We have so few commenters that we won't restrict the time limit. Just keep it reasonable. We initially thought that we would have a time of five minutes, but that was based on having a larger list of comments.

For the record, we ask you to use the microphone, speak clearly, spell -- state and spell your name for the benefit of the court reporter. And if you're making comments on behalf of an organization, please indicate the organization or affiliation. The first commenter is Susan Hovorka.

MS. HOVORKA: Hi. I'm Susan Hovorka, H-O-V-O-R-K-A. I'm a research scientist at the Bureau of Economic Geology at the University of Texas at Austin. And, first of all, I would like to commend you on the effort to take a proactive stance to investigating options for producing carbon emissions. I would also like to welcome you to the Gulf Coast. You'll notice this region has unique aspects. And as part of those unique aspects, the

potential risks for a business' usual approach to atmospheric release of carbon dioxide are significant. Some of these risks are relative sea level loss, increased storm severity, flooding. And we already are very aware of these risks. Increased risk of tropicalization are significant because it's already warm.

Other negative effects are combustion of the atmosphere in our summer heat such as ground-level ozone and increase the awareness of the negative effects of combustion in this region in particular. The Gulf Coast is also deeply invested in the energy drive for fossil fuels. The Gulf Coast is a major oil and gas producing region and also a significant area of lignite production. We have a large and growing population that consumes oil, gas, and coal for electricity and transportation. We also have a unique, high concentration of heavy industries along the Gulf Coast. These are major both processors of fuel and consumers of energy for manufacturing.

I would like to talk a little bit about the options for reducing emissions through geologic sequestration. My reason for choosing this topic is not to downgrade any of the others but

because I know something about geologic sequestration. I would like to make a significant comment about it.

The Gulf Coast region has very high potential for geologic sequestration of carbon dioxide. The subsurface contains thick sandstones with the capacity to contain very large volumes of C02. Numerous thick regional extensive shales form the seals that retains the C02 in the subsurface. The characteristics of the subsurface are exceptionally well-known because of decades of exploration for oil and gas. We also know a lot about the subsurface and its capacity to retain fluids through underground injection, which is widely used in this region as a method to dispose of wastes that are unwanted at the surface. In addition to pure sequestration, this region has excellent opportunities for beneficial use of C02 in the subsurface through using carbon dioxide to enhance oil production as one element of the sequestration process.

The DOE has already made a strong start towards assessing the risks and benefits of this process. It's very important that this assessment continues. Our past experience in

research has indicated that the subsurface in the Gulf Coast region is capable of storing large volumes of C02 and that these can be stored for long enough periods to benefit the atmosphere. The risks to health and safety and to the environment resulting from geologic sequestration that haven't been impacted so far as identified are manageable. However, we continue assessment to demonstrate the validity of what I just said.

I would like to mention just a couple of examples of the kind of things that we have to understand clearly to proceed ahead. These are from my own research experience. These are not really off-the-cuff comments but something I have been thinking about for a number of years. We don't have a reliable method to dating the footprint and the concentration of C02 in the complex subsurface environment, and this is something we need to be able to tell -- to know before we -- before we can do it because we have to say, "This is where it's going to go, and this is how it's going to behave." We need methods to determine the C02 will be retained in the injection interval for long enough periods to have the benefit that we want for the atmosphere, and the detection of these small rates of leakage of C02 from

the zone are still technically difficult. We don't have a method for measuring it, and it's not an easy or simple technical fix. We need to spend a good deal more effort on this.

The potential to inject very large volumes that are necessary to impact the atmosphere might have other risks that are -- because of the very large volumes. One is we might displace brine and impair the quality of the potable water. So, we need to consider the scale.

And the last scale-off effect is we should consider the effect of injecting very large volumes on earth mechanics on raising the land surface or reducing stresses. I think this part we still don't have a high enough level of confidence to pursue that. Thank you.

MR. LORENZI: Thank you for your comments. Do you by any chance -- I want to ask you a technical question.

Do you have written comments that you'll be submitting?

MS. HOVORKA: I just read them. I can certainly send them written. I'll be glad to give you whatever length you-all want on this.

MR. LORENZI: Thank you very much.

Second person to register is Brandt Mannchen.

MR. MANNCHEN: My name is Brandt Mannchen, B-R-A-N-D-T, M-A-N-N-C-H-E-N, and I'm representing the Houston Sierra Club. We will be submitting comments in writing by the June 25th deadline, but these are just some preliminary thoughts.

One thing we're particularly interested in as a way to sequester carbon would be land acquisition. In the Federal Register it talked about besides the main benefit of sequestering carbon dioxide what other benefits. We can think of numerous side benefits as far as protecting biologically, ecologically important areas.

In the presentation, Scott talked about re-forestation. We would like to suggest you also focus on not having aforestation. In other words, existing important areas that are forested should at all possible remain that way from the standpoint of when those areas are developed, the release of carbon is very high. And it seems to me in order not to make the situation worse, you want to as much as possible to try and keep those areas from being aforested. And it seems also that in order to get the biggest bang for the buck, you should look at

areas that already have been protected and that could use the initial buffer protection as high-quality land for these other purposes, as well as carbon sinks. So, I would like for a focus also on that and those additional benefits, which could be very large in this particular area.

I'm thinking primarily of three areas. The Fish and Wildlife Service down in Brazoria County and adjacent counties has a program to develop and make national wildlife refuge -- it's called Columbia Bottomlands or Austin's Woods. It protects a unique and, in many ways, very mature and older forest from being developed, and I can see that as being one area where if you went in to preventing aforestation that might be a good area.

The second area is the Big Thicket National Preserve, and the third area is just 50 miles north of Houston in the Sam Houston National Forest. There's a lot of opportunities to acquire buffering lands. This would also protect clean water, and we'll put that in our comments. It's a thought to think about. I would like to see that focus more than a focus on some of the papers I've seen where people are talking about plantations. We have this vigorously-growing young trees that are

scooping up all the C02. In addition, we have these mature forests that are just sinking all the C02.

So, I hope the focus will be more on the older forests than on, you know, helping Louisiana Pacific grow more pine plantations. That's about as graphic as I can get.

I've also read -- and I don't know as much about the -- the topic, but I've heard that just planting trees just ain't going to get us anywhere. You can plant lots of trees, but you just can't plant enough to really get to that point of really helping significantly. Preventing aforestation will help the situation.

It seems like this program assumes that we're continue in the present situation. And I realize you guys have a direction you've got to go in, but to me that's a big flaw assumption. If we could take from that pie, what is it, 40 percent of our energy presently comes from oil? It we could reduce that 5 or 10 percent and use something that's a lot less carbon dioxide generating, seems to me we would be doing the same thing as playing with sequestering.

So, I want to urge you as much as you can within the constraints of your program to think

about, you know, if we put all -- we're putting all this into fossil fuels. Suppose we took all this money and put it into some of those other alternatives, you know, that have very little C02 and got us off more coal. Maybe that would get us farther down the road as far as not making the situation worse and also not having so much to sequester. It's just a thought.

I don't know if this is -- makes sense, but if you take C02 and you add a little hydrogen, you get carbonic acid, a slightly acid material. I don't know if taking all that C02 and pushing it down into our groundwater is going to do anything to change the pH content, but I think it's worth looking into.

I like the idea of no legacy for future generations. I think you should focus on that heavily, that whatever we do makes it at least no worse than what we've got because we're already handing a huge problem to our children and grandchildren. Whatever we can do to make it better is obviously good.

Yes, I definitely agree with your idea about need to verify. What I'm concerned about is if you don't monitor well, being able to say, "This much

now and two years later this much," and everything and make sure that we're not losing that capability, talking about sequestering, we could be giving, for instance, industry credit that, in fact, they don't deserve or if we have poor methodologies in calculating how much they should do to get a carbon credit or something like that, we could be giving them carbon credits when we really shouldn't be.

So, we have to be real careful. I assume we're talking eventually caps and emission trading. I don't particularly like those myself, but I assume we're talking about that. A lot of times what I see in the Houston area when we talk about our ozone situation, they have similar things. We have such poor technology telling us what's actually in the air that we can't even really say that these caps are going to do the job. So, I think it's really crucial that we somehow figure out what really is coming out or going in and really staying in or leaking out.

When you mentioned health of a tree and how often a forester came out, it gave me kind of the willies from an ecological perspective because a lot of forests, they grow and they die and they grow and they die and that's very natural and that's okay.

What I don't want to have is someone come out and say, "Golly gee, you know, they are looking a little decadent. Let's cut them down and grow those frisky, young trees so we can absorb more carbon." I get a little worried about that healthy forest thing. So, I want to throw that out there because that can be misused to destroy or afforest things you shouldn't be cutting down and making the situation worse.

I'm also concerned that the focus seems to be on coal. And no offense to DOE, but coal is about as dirty a fuel as you can ever use. Whatever we can do to get away from coal seems to be appropriate. If you're going to focus our effort of a billions dollars showing how we can make coal clean, we're going to encourage the use of coal and I'm not so sure that we're going to make coal that clean. I'm wondering if that's the best thing to do.

And, finally, the last thing -- this is the key question. What is best for the public? You know, obviously the oil and gas industry can tell you what's best for them, but that isn't necessarily what's best for the public. I want to encourage DOE -- because it is a part of the federal government and because it's the public's money and part of the public's government and is supposed to be working for

the public -- but most in your mind should be is this really best for the public or am I basically allowing this special interest -- in my opinion, special interest is industry -- to direct or generate the program for its best interest, which may not be the best interest of the public at large. That's a very important tenant to keep in mind.

At any rate, we're going to submit written comments and we appreciate this opportunity to comment. Thank you.

MR. LORENZI: Thanks for your comments. I would like to just ask one question. Do you actually know what's going on with the forest service which -- that's not a federal agency. They may have their own -- when they manage a forest, they have to go through this process ever so many years -- I don't know what their cycle would be for any particular national forest.

Are you suggesting that the Department of Energy somehow should try to work with those other federal agencies that do those kind of functions, or are you just throwing out something so that those other federal agencies may focus on those functions themselves?

MR. MANNCHEN: I'll give you an

example. I'll give you a name. Mike Lane works with the U.S. Fish and Wildlife Service. He's the person who's working on the Columbia Bottomlands down in Brazoria, Fort Bend, and Wharton Counties. He actually has had a consultant do an estimate of the forest -- some of the forests that they have acquired and what carbon stores they have, which I think is a very farsighted thing for him to do because he's been looking at carbon sequestration saying, "This really happens. There may be some benefit here for the refuge as far as assisting us."

So, what I'm suggesting is that you may be able to kill two birds with one stone. You may be able to do something with carbon sequestration and not deforesting an area and also have a public land base that is good for the public and good for wildlife and other things, too, depending on what the land base is. The land base might be fish and wildlife, might be the forest service, might be the ELM, might even be the military service because they have a lot of forested public lands, like out in Florida.

So, it can take all different kinds of partnerships, as everybody loves to use that term nowadays. And so, I would certainly encourage DOE

that since you mention a -- basically land that is improved in its capacity to sequester carbon or sort of kind of started from the ground level and brought back up as one of the four areas or technologies or whatever that you want to look at, you have these other agencies that also have goals that somewhat might fit in with what you're talking about for that specific way to sequester carbon.

And so, you may want to -- if you don't already -- be interacting with them in some sort of a task force or however you-all do it to see if something can work out. If it does work out, it seems to me that would provide a lot of additional benefits for the public and the public would be very appreciative of that.

MR. LORENZI: I just wanted to get on the record your view of our -- the Department of Energy relationship with these other --

MR. MANNCHEN: It can also be local or state agencies, for that matter. Anybody who for whatever reason has a land base or is protecting a land base. I don't know. I'm sure it's thousands of entities.

MR. LORENZI: Thank you. I work for the Department of Energy, and I will not defend the

Department of Energy's activities because those activities flow down from the top. The Department does have a program in efficiency improvements, usage renewables, and we or Scott or the Fossil Energy Office doesn't view his organization as competing with those other Department of Energy functions. It's a matter of doing what we have to do at the present time, recognizing in the future things are going to look a lot different than they are today. Just so you know, the Department of Energy does not ignore things like renewables and efficiency and use of carbon.

MR. MANNCHEN: Sure. I appreciate that. It's just I think we can all agree that we can do more. We have it. We're just putting it in the wrong place.

MR. LORENZI: That's off the record. Are there any others with comments to make? This is your opportunity to do so, at least at this point. If not, I'll just remind everyone that June 25th is the cut-off date for comments. You may submit written comments. You might take some of the information that's out on the site that does provide details on the persons for submitting comments following the meeting, as well as technical points of

contact if you have technical questions.

It's a small crowd. How much can I encourage you? I'm sorry for that, but this -- we're looking for the public to participate in these government functions. And so, I would encourage you to take the opportunity whenever it's presented. When we come back here with a draft EIS, I would encourage you-all to do that. Keep aware of the status of our activities and come back at that time and provide feedback on the exact EIS.

With that final comment, I will wish you-all safe travel home. Thank you all for your participation, and at 7:50 or so we'll call the meeting to a close.

(Whereupon the meeting was adjourned.)

STATE OF TEXAS
COUNTY OF HARRIS

REPORTER'S CERTIFICATE
PUBLIC MEETING
MAY 25, 2004

I, the undersigned Certified Shorthand Reporter in and for the State of Texas, certify that the facts stated in the foregoing pages are true and correct to the best of my ability.

I further certify that I am neither attorney or counsel for, related to, nor employed by any parties to the action in which this testimony is taken and, further, that I am not a relative or employee of any counsel employed by the parties hereto or financially interested in the action.

SUBSCRIBED AND SWORN TO under my hand and seal of office on this the 27th day of May, 2004.

Shauna Foreman, CSR
Texas CSR 3786
Expiration: 12/31/2004
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